

**WHAT IS CLAIMED IS:**

1. A manufacturing method of an SOI wafer, comprising the steps of:

bonding a wafer for active layer with a supporting wafer via an insulating film interposed therebetween to thereby form a bonded wafer; and then

reducing a film thickness in a part of said active layer wafer of said bonded wafer to thereby form an SOI layer for manufacturing said SOI wafer, wherein

said supporting wafer contains boron by an amount of  $9 \times 10^{18}$  atoms/cm<sup>3</sup> or more.

2. A manufacturing method of an SOI wafer in accordance with claim 1, further comprising the steps of:

ion-implanting of hydrogen gas or a noble gas element to said active layer wafer to thereby form an ion-implanted layer in said active layer wafer;

subsequently bonding said active layer wafer and said supporting wafer together to thereby form a bonded wafer; and then

heat treating said bonded wafer to thereby induce cleavage in said bonded wafer at the site of said ion-implanted layer as an interface.

3. A manufacturing method of an SOI wafer in accordance with claim 1, in which a thickness of said SOI layer is  $0.10 \mu\text{m}$  or thinner.

4. A manufacturing method of an SOI wafer in accordance with claim 2, in which a thickness of said SOI layer is  $0.10 \mu\text{m}$  or thinner.

5. A manufacturing method of an SOI wafer in accordance with claim 1, in which an insulating film is formed at least on a surface opposite

to a bonding surface of said supporting wafer before said step of bonding.

6. A manufacturing method of an SOI wafer in accordance with claim 2, in which an insulating film is formed at least on a surface opposite to a bonding surface of said supporting wafer before said step of bonding.

7. A manufacturing method of an SOI wafer in accordance with claim 3, in which an insulating film is formed at least on a surface opposite to a bonding surface of said supporting wafer before said step of bonding.

8. A manufacturing method of an SOI wafer in accordance with claim 4, in which an insulating film is formed at least on a surface opposite to a bonding surface of said supporting wafer before said step of bonding.

9. A manufacturing method of an SOI wafer in accordance with any one of claim 1 to 8, in which said supporting wafer is subjected to annealing at 1100°C or higher in a reducing gas atmosphere containing hydrogen gas before said step of bonding.

10. An SOI wafer manufactured by a method comprising the steps of:

bonding a wafer for active layer with a supporting wafer via an insulating film interposed therebetween to thereby form a bonded wafer; and then

reducing a film thickness in a part of said active layer wafer of said bonded wafer to thereby form an SOI layer for manufacturing said SOI wafer, wherein

said supporting wafer that has been bonded contains boron by an amount of  $9 \times 10^{18}$  atoms/cm<sup>3</sup> or more, and

said SOI layer has a thickness of 0.10  $\mu\text{m}$  or thinner.